

TWO NEW SPECIES OF AMERICAN ARADIDAE (HEMIPTERA)

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Abstract.—The author proposes two new taxa, *Aradus oregonicus* new species and *A. usingeri* new species, both from Oregon and both belonging to the "Quilnus group." A new record and the description of a male is given for *Eunotoplocoris ruckesi* Kormilev (1957) from Peru.

By the kind offices of Dr. Harry Brailovsky, Instituto de Biología UNAM, Mexico City, Mexico, and Prof. Dr. John D. Lattin, Oregon State University, Corvallis, Oregon, I have had an opportunity to study two lots of American Aradidae from collections under their care, for which I express my sincere gratitude.

Among other common species, two species of *Aradus* Fabricius, 1803, from Oregon, belonging to the "Quilnus group," were new and are described in this paper.

The genus *Eunotoplocoris* Kormilev (1957) was described based on a single female from Peru. Now I am able to give a description of a male of the same species, *Eunotoplocoris ruckesi* Kormilev, 1957.

All measurements in this paper were taken by micromillimeter eyepiece, 25 units = 1 mm. In ratios the first figure represents the length and the second the width of measured portion. The length of the abdomen in *Aradus* F., for convenience, was taken from the tip of the scutellum to the tip of the genital lobes.

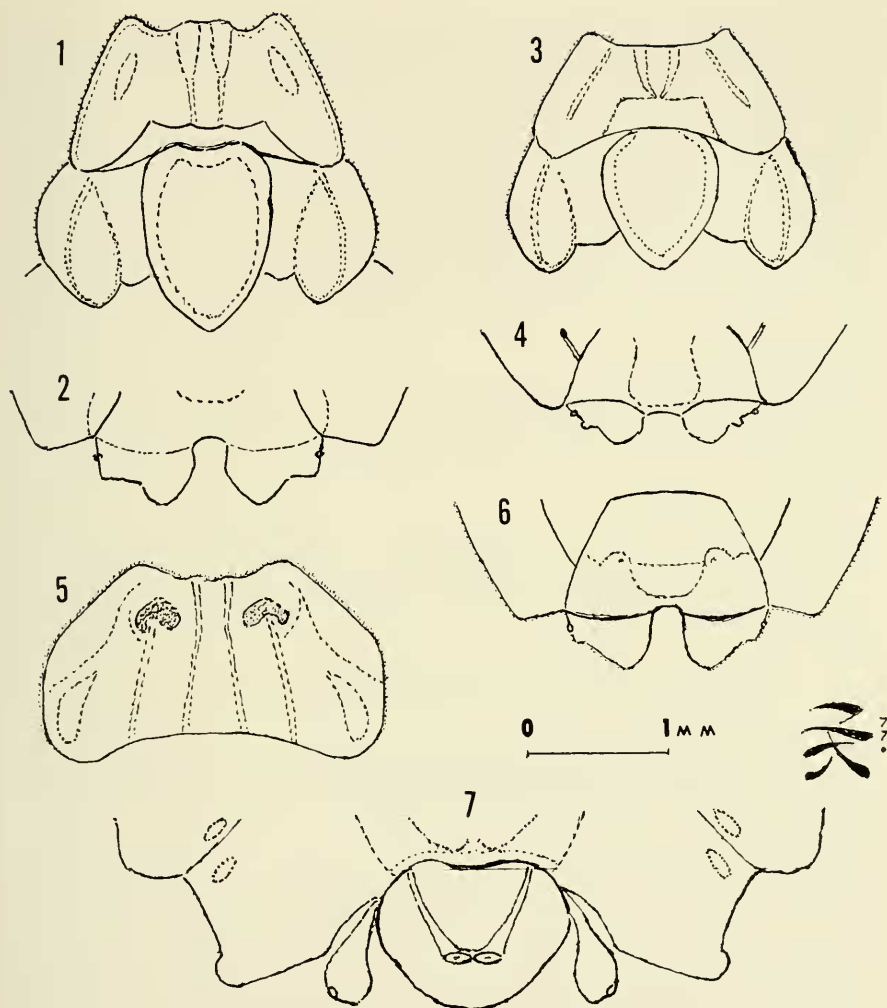
Subfamily ARADINAE
Genus *Aradus* Fabricius, 1803

"Quilnus group" is characterized by the labium not extending beyond the fore border of the prosternum and by the straight lateral borders of the pronotum. It has so far only 10 species, of which three are from the Nearctic and 7 from the Palaearctic Region. I am now adding two new species from Oregon.

Aradus heidemanni Bergroth
Figs. 1-2

Aradus heidemanni Bergroth (1906) is rather common in Oregon and Northern California.

Measurements of a brachypterous female from Oregon: Head 33:33; relative length of antennal segments I-IV are 8:20:18:13; pronotum 17:50; scutellum 35:20; abdomen 125:105. Total length 7.80 mm; width of pronotum 2.00 mm; width of abdomen 4.20 mm.



Figs. 1-2. *Aradus heidemanni*, female. 1. Pronotum, scutellum and hemelytra; 2. Tip of abdomen from above. Figs. 3-4. *Aradus oregonicus*, female. 3. Pronotum, scutellum and hemelytra; 4. Tip of abdomen from above. Figs. 5-6. *Aradus usingeri*. 5. Pronotum; 6. Tip of abdomen from above. Fig. 7. *Eunotoplocoris ruckesi*, male, tip of abdomen from above.

Aradus oregonicus Kormilev, new species

Figs. 3-4

Description.—Female. Brachypterous.

Head: As long as its width across eyes (30:30); anterior process compressed laterally, reaching slightly beyond tip of antennal segment I; an-

tenniferous tubercles acute, diverging, lateral tooth absent; postocular tooth minute, rounded. Antennae $1\frac{1}{2}\times$ as long as width of head across eyes (45.5:30); antennal segment I obovate, II and III cylindrical, IV fusiform; relative length of antennal segments I-IV are 7.5:15:15:8. Labium reaching hind border of labial groove, which is closed posteriorly.

Pronotum: Trapezoidal, shorter than its maximum width (15:45); anterior angles produced forward and rounded; lateral borders straight, strongly converging and finely serrate; hind angles produced backward and rounded; hind border evenly sinuate between hind angles. Disc with median sulcus, flanked by 2 (1 + 1) short carinae, converging posteriorly, and further laterad by 2 (1 + 1) oblique carinae; depressed along posterior border medially.

Scutellum: Short, only slightly longer than its maximum width (25:20); lateral borders raised and rounded, tip narrowly rounded; disc depressed.

Hemelytra: Abbreviated, without membrane; corium reaching tip of scutellum.

Abdomen: Longer than its maximum width (95:86); postero-exterior angles of connexiva II-VI not protruding, but lateral border is notched at sutures between connexiva; postero-exterior angle VII is rounded. Genital lobes subtriangular, rounded at tip and with a small tubercle on exterior border.

Color: Black, dark brown on ventral side.

Size: Total length 6.64 mm; width of pronotum 1.80 mm; width of abdomen 3.44 mm.

Holotype.—Female (Entomological Museum, Oregon State University) Oregon, Linn Co., Lost Prairie, 3,800'; 38 mi E Sweethome; 29.VII.1958; J. D. Lattin leg.

Discussion.—*Aradus oregonicus* is closely related to *A. heidemanni* but is smaller; the antennae are relatively shorter, only $1.52\times$ as long as width of head across eyes ($1.78\times$ in *A. heidemanni*); the lateral tooth is absent; the postocular tubercles are minute and rounded; the pronotum is less cut out posteriorly. Scutellum is relatively shorter, almost ovate, with rounded lateral borders. Lobes of VIII (genital lobes) are much shorter and are more rounded posteriorly; the incisure between them is shallow with ratio of depth of incisure to width of head across eyes as 5:30 (12:33 in *A. heidemanni*).

Aradus usingeri Kormilev, new species

Figs. 5-6

Description.—Female. Macropterous. Head, pronotum, scutellum, basolateral borders of corium and base of veins, connexiva, tergum VII and genital lobes, covered with short, erect, spiculoid granulation.

Head: Longer than its width across eyes (35:31); anterior process long, compressed laterally, reaching beyond base of antennal segment II; antenniferous tubercles acute, long, and slightly diverging, reaching $\frac{1}{2}$ of antennal segment I. Lateral tooth absent; preocular tubercles minute, but distinct; postocular small, rounded. Vertex with 2 (1 + 1) black, callous spots, connected posteriorly and flanked by erect, spiculoid granulation. Antennae long, as thick as in *A. heidemanni*, $1.7\times$ as long as width of head across eyes. Antennal segment I barrel-shaped, II and III cylindrical, IV fusiform; relative length of antennal segments I-IV are 7:18:16:12. Labium thin, reaching hind border of labial groove, which is open posteriorly.

Pronotum: Hexagonal, less than $\frac{1}{2}$ as long as its maximum width (27:60); anterior border sinuate; anterolateral angles slightly produced forward, rounded; lateral borders parallel, converging anteriorly; hind angles rounded and slightly produced backward. Fore disc with 2 (1 + 1) horseshoe-shaped black callosities and with 4 (2 + 2) thin ridges, flanked posteriorly by 2 (1 + 1) short ridges.

Scutellum: Subtriangular, longer than its maximum width (41:30); lateral borders raised and slightly convex, tip rounded, disc depressed.

Hemelytra: Complete, reaching $\frac{1}{2}$ of tergum VIII; corium reaching hind border of connexivum IV, clavus reaching tip of scutellum; basolateral borders of corium expanded, rounded and reflexed; apical angle acute, apical border convex forming 2 festoons; veins raised.

Abdomen: With subparallel, slightly convex sides, longer than its maximum width (100:90); posteroexterior angles of connexiva II-V not protruding, VI protruding, VII forming an obtuse angle. Lobes of VIII subtriangular, deeply cleft; ratio length of incisure to width of head across eyes as 12:31.

Color: Dark brown to black.

Size: Total length 8.28 mm; width of pronotum 2.40 mm; width of abdomen 3.60 mm.

Holotype.—Female (Entomological Museum, Oregon State University), Oregon, Corvallis, Benton Co., 14.IV.1958, on side walk; J. D. Lattin leg.

Etymology.—This species is dedicated to the memory of late Prof. Dr. Robert L. Usinger, who contributed so much to our knowledge of Aradidae.

Discussion.—*Aradus usingeri* is related to *A. heidemanni*. It belongs to the same "Quilnus group" as it has the labium not produced beyond the hind border of the head. It may be separated from the latter by being macropterous (females of *heidemanni* are brachypterous and males stenopterous), by having the pronotum hexagonal and not trapezoidal, by possessing differently shaped genital lobes, and by having curious, spiculoid granulation.

Subfamily MEZIRINAE

Genus *Eunotoplocoris* Kormilev*Eunotoplocoris ruckesi* Kormilev

Fig. 7

Description.—Male. Head, pronotum and scutellum roughly granulate; central dorsal plate and connexivum roughly punctured; body covered with short, curled, rusty hairs; femora and antennal segments I–III with erect bristles. Micropterous.

Head: Shorter than its width across eyes (61:65); anterior process robust, slightly constricted at sides, genae produced far beyond clypeus and cleft, reaching $\frac{1}{2}$ of antennal segment I. Antenniferous tubercles robust, dentiform, divaricating, reaching basal $\frac{1}{4}$ of antennal segment I. Eyes globose and slightly stalked. Postocular tubercles minute, by far not reaching outer borders of eyes; postocular borders behind them are long and converging in slightly arcuate line. Infraocular carinae low, crenulate; vertex raised and with a double row of granules. Antennae relatively thin, with exception of 1st segment, which is stout and fusiform; II subcylindrical, slightly enlarged apically and tapering at base; III cylindrical; IV is missing; relative length of antennal segments I–III is 40:25:37. Labium very short, reaching $\frac{1}{2}$ of a deep labial groove, which is open posteriorly.

Pronotum: Much shorter than its maximum width across anterolateral lobes (26:82). Collar sinuate and granulate; anterior borders laterad of collar sinuate; anterolateral angles produced into winglike lobes, straight interiorly and rounded exteriorly, crenulate and produced far beyond collar. Lateral borders are narrower than anterolateral lobes (80:82), parallel between themselves; hind border evenly arcuate. Fore disc with a shallow median depression, flanked by 2 (1 + 1) flat, semicircular callosities, and further laterad by 2 (1 + 1) high, ovate ridges. Hind disc is greatly reduced to a narrow strip along hind border of pronotum, separated from fore disc by a thin, transverse sulcus.

Mesonotum: Subtriangular in the shape of a scutellum, shorter than its basal width (33:75), truncate posteriorly and raised medially, covered with very rough granulation.

Metanotum: Consisting of 2 (1 + 1) plates, separated by mesonotum, raised posteriorly and deeply depressed anteriorly.

Hemelytra: Reduced to small, elongate pads, placed laterad of mesonotum.

Abdomen: Subquadrate, longer than its maximum width across segment II or V (148:135); tergum I raised, convex anteriorly and sinuate posteriorly, separated from metanotum and tergum II by thin sulci. Tergum II much wider than tergum I, flat, separated from quadrate central dorsal

plate and connexivum by thin sulci. Central dorsal plate consisting of terga III-VI fused together, it is raised medially and laterally, with 2 (1 + 1) rows of round, callous spots placed in depressions; laterad of them with 2 (1 + 1) rows of smaller, round, callous spots, also placed in depressions in zigzag pattern. Connexivum roundly produced at segment II; with parallel, but festooned borders from III-VI; converging at VII. Posteroexterior angles of connexiva from II-VI rounded and protruding; forming small, rounded and diverging lobes on VII. Scars of dorsal scent gland openings placed on terga IV and V posteriorly. Tergum VII raised for reception of a large hypopygium (25:33) with a flat, triangular, median ridge, and semicircular, biheaded ridge surrounding the latter. Paratergites clavate, reaching $\frac{2}{3}$ of hypopygium. Spiracles ventral from II-VI and placed far from border, ventral, but placed near border on VII, lateral and visible from above on VIII. Metathoracic scent gland openings are large, gaping, slightly curved and visible from above.

Legs: Unarmed, arolia absent.

Color: Uniformly black.

Size: Total length 11.20 mm; width of pronotum 3.28 mm; width of abdomen 5.40 mm.

Material.—Male (Instituto de Biología UNAM, Mexico City, Mexico), Peru, Cuzco; P. Reyes leg.

Literature Cited

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